

REMARKS

Claims 1-4, 6 and 14 have been canceled. Claims 6 and 14 have been canceled by way of this response. New claims 15-20 have been added. Thus, claims 5, 7-13, and 15-20 are currently pending and presented for examination. Applicants respectfully request reconsideration and allowance of the pending claims in view of the foregoing amendments and the following remarks.

Response to Rejections Under Section 112:

Claims 5-12 and 14 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter.

Applicants amended claim 5 in respect to the wording "a first value" and "a second value".

Claim 6 and 14 have been canceled, thus making the rejection moot for this claims.

Therefore, Applicants respectfully request that the Examiner withdraw the Section 112 rejection for claims 5-12, and 14.

Response to Rejections Under Section 103:

Claims 5-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kumpfmueller (USPN 6,530,277).

Applicants' Claim 5 recites:

a bandpass filter to filter a signal recorded with the solid-borne sound sensor

Kupfmueller neither discloses nor suggests all the claimed limitations in particular not the use of a bandpass to filter a recorded signal, therefore the rejection must fail.

The following is a quotation from MPEP 2143

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Furthermore Applicant's Claim 5 recites:

a comparing device to compare the sound levels of the open state and the closed state to create a difference between the sound levels,

and Applicant's Claim 9 recites:

a calculating device to calculate a first sound level of a first sound signal recorded in a closed state of a valve and to calculate a second sound level of a second value of a second sound signal recorded in an open state of the valve

and Applicant's Claim 13 recites:

determining a second sound signal recorded in the open state of a second valve or in the open state of the first valve,

In contrast Kupfmüller discloses to compare the sound of a closed state with the sound, when the valve is almost closed or slightly open (see Col. 1, lines 57-58). Kupfmüller discloses in Col. 1 lines 53-55 that the almost closed state and the slightly open state are comparable with a closed valve with a defective valve state. Kupfmüller does not disclose or suggest the claimed limitation of using a sound signal of an open state of the valve as a signal to compare.

The diagnostic method/system claimed, is contrary to the method disclosed and suggested by Kupfmüller. Kupfmüller is using the basic principle that two signals are **similar** in case of a failure (see Col. 1, Lines 53-60 and Col. 3, Lines 17-19). In contrary the claimed invention is using the basic principle that the two signals to be compared as claimed are **very different** in case of a failure of the valve (see FIG 4).

Additionally Applicant's Claim 5 and 9 recite:

wherein a first sound value is determined based on a last sound signal recorded in the closed state and a second value is determined based on a last sound signal recorded in the open state

In contrast Kupfmüller discloses to store a reference signal recorded when the valve is almost closed or slightly open and to compare it with a noise spectrum of the closed valve (see Col. 1, lines 55-60). Doing so Kupfmüller discloses to compare a recorded signal from a non defective valve seat with a recorded signal of a defective valve seat. In the claimed limitation the recorded signals to be compared are different, because two actual sound signals are used and not only one:

- *the last sound signal recorded in the closed state and*
- *the last sound signal recorded in the open state.*

Kupfmüller neither discloses nor suggests to compare two last sound signals (actual sound signals). Kupfmüller merely discloses to compare a stored reference signal with a signal of a valve with a defective valve seat (see Col. 1, Lines 55-60). The claimed limitation of using two last sound signals (actual signals) is neither disclosed nor suggested by Kupfmüller.

In view of the above, Claims 5, 9 and 13 are not anticipated by Kupfmüller. Furthermore, Claims 7-8, 10-12 and 15-20 which depend on one of the claims 5, 9 and 13 are also patentable at least based on their dependence from claim 5, 9 or 13 as well as based on their own merits. Therefore, Applicants respectfully request that the Examiner withdraw the Section 103 rejections.

New Claims:

New claims further define the scope of the invention as described in the specification and drawings. In view of the foregoing remarks regarding the other claims, Applicants respectfully submit claims 15-20 are patentable and requests allowance of claims 15-20.

Conclusion

For the foregoing reasons, it is respectfully submitted that the objections and rejections set forth in the outstanding Office Action are inapplicable to the present claims. All correspondence should continue to be directed to our below-listed address. Accordingly, Applicants respectfully request that the Examiner reconsider the objections and rejections and timely pass the application to allowance. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including fees for additional claims and terminal disclaimer fee, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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